

## CLAIMS

### What is Claimed is:

1. A communications apparatus connectable to a SS7 network for processing voice-to-data signals, comprising:

5 at least one pair of signal transfer points (STP), each of which is connectable to at least one other STP within the public switched telephone network (PSTN) wherein SS7 signals are transferred therebetween; and

10 at least one switching device connectable to the at least one matched pair which in turn is connectable to a media gateway with its own point code, wherein the switching device controls the processing of the voice information received at the media gateway from the PSTN in response to the SS7 signals received through the at least one pair of STP's.

15 2. The apparatus of claim 1 wherein a first STP of the at least one pair of STP's is located at a first geographic location and a second STP of the at least one pair of STP's is located at a second geographic and a communications link is provided therebetween.

20 3. The apparatus of claim 2 wherein a first switching device is in communication with the first STP at the first location and a second switching device is connection with the second STP at the second location.

4. The apparatus of claim 3 wherein the first and second switching devices include a switching routers which are connectable over a packet transport network.

25 5. The apparatus of claim 4 wherein the first and second switching routers are configured to transfer encapsulated SS7 messages (MTP, ISUP, and TCAP) between each of the second pair of STP's.

6. The apparatus of claim 1 wherein the at least one switching device includes a plurality of call/media computers configured to process the SS7 received by the at least one pair of STP's and to generate control signals which are transmittable over a data network to the media gateway which provides for the voice-to-data processing.

5 7. The apparatus of claim 6 wherein the plurality of call/media computers are connectable to the at least one STP's and the router through a communications network which comprises a logical A-link.

8. The apparatus of claim 7 wherein the communications network comprises at least one of: a local area network (LAN) and a wide area network (WAN)..

10 9. The apparatus of claim 6 wherein the plurality of call/media computers provide at least one of: class 4 and class 5 switching services.

10. The apparatus of claim 6 wherein the at least one pair of STP's is further configured to perform lower level SS7 protocol processing and encapsulate SS7 ISUP message for transfer over an IP network.

11. A method for processing voice-to-data traffic in an SS7 signaling network comprising the steps of:

upon detection of a telephone call within the PSTN, routing SS7 information for the call to a first pair of STP's wherein the telephone call is routed over the voice trunk to a point code 5 associated with the media gateway for providing voice-to-packet packet processing for transmission of voice information over a data network;

routing the SS7 information for the detected call to a first STP pair associated with the point code associated with the data gateway;

further routing the call signaling information to a second pair of STP's associated with 10 the point code for the media gateway over a plurality of B-links established between the first and second pair of STP's; and

processing the SS7 information at the second pair of STP's and providing to the processed information to at least one call/media gateway computers associated with the media gateway for further processing.

15 12. The method of claim 11 further comprising the step of generating call processing signals at the call/media gateway computers which in turn are transmitted over a data network to the media gateway.

13. The method of claim 11 wherein a first STP of the pair of STP's is located in a first geographic location and a second STP of the pair of STP's is located at a second geographic 20 location.

14. The method of claim 12 wherein a plurality of call/media computers are provided at the first and second locations and communications is established between the first and second locations through use of a packet transport network.

15. The method of claim 14 wherein the packet transport network is employed to transmit the SS7 signaling messages between first and second STP's.

16. The method of claim 11 wherein B-links are employed to transfer SS7 signaling messages between STP's in the SS7 network and the at least one pair of STP's.

5 17. The method of claim 11 further including the step of performing lower level SS7  
protocol processing and encapsulating SS7 ISUP messages at the at least one pair of STP's.

18. The method of claim 11 wherein SS7 messages are both transmitted over both C-links established between the first and second STPs and over the packet transport network.